

positioning the distal end of the fiber optic cable at the surgical site; and

removing tissue at the surgical site with the laser beam.

cont'd
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58. A method as recited in Claim 57 wherein the laser beam is generated by a Ho:YAG laser.

59. A method as recited in Claim 57 wherein the laser beam is generated by a Ho:YLF laser.

REMARKS

In accordance with 37 C.F.R. §1.607 Applicant hereby seeks to have an interference declared among the above-identified application, U.S. Patent No. 5,147,354 ('354 patent), and U.S. Patent No. 5,037,421 ('421 patent). A proposed count which would be suitable for a three-way interference among the above-identified patent application, the '421 patent and the '354 patent reads as follows:

PROPOSED COUNT

A method of performing a surgical procedure for the removal of biological tissue comprising the steps of:

generating a laser beam having a wavelength of between 1.4 and 2.2 microns;

directing the beam into one end of a fiber optic cable, with the other end of the fiber optic cable defining the delivery end thereof;

positioning the delivery end of the fiber optic cable at the surgical site; and

removing tissue at the surgical site with the laser beam.

Claims 1-6 of the '421 patent and Claims 1-9 of the '354 patent all correspond to the proposed count. In the present application, Claims 44-59 all correspond to the proposed count. Claims 44 and 49 were substantially copied from Claim 1 of the '421 patent, and Claims 45-48 were substantially copied from Claims 2, 3, 4, and 6 respectively of the '421 patent. Claim 50 was substantially copied from Claim 4 of the '354 patent while Claims 51 and 52 were substantially copied from Claims 5 and 6 respectively of the '354 patent. Claim 53 was substantially copied from Claim 7 of the '354 patent, while Claims 54 and 55 were substantially copied from Claims 8 and 9 respectively of the '354 patent. Claim 56 was substantially copied from Claims 1 and 4 of the '354 patent. Claims 57-59 were substantially copied from claims 7-9 of the '354 patent. Claim 1 of the '421 patent, Claims 1, 4 and 7 of the '354 patent and Claims 44, 49, 50, 53, 56 and 57 in this application all claim the same patentable invention.

The specification in the '354 patent is identical in every respect to the specification in the '421 patent. The '354 patent issued from an application which was a continuation of

Application Serial No. 626,388 which issued as the '421 patent. It is also apparent that the '354 patent claims are patentably indistinct from those of the '421 patent, since the Applicant in the '354 patent was required to file a Terminal Disclaimer. Thus, if the claims in the present invention claim the same patentable invention as that claimed in either one of the '354 patent or the '421 patent, then the foregoing claims of the present application also claim the same patentable invention as that claimed in the other of the '421 and '354 patents.

As can been seen, the proposed count herein does not correspond exactly to Claim 1 of the '421 patent, or to Claims 1, 4 and 7 of the '354 patent. The proposed count is broader in some respects than any of these patent claims. In the first place, the preamble has been changed from the preambles noted in each of the patent claims to -- A method of performing a surgical procedure for the removal of biological tissue --. This preamble encompasses each of the preambles of the claims in the '421 patent and the '354 patent, since it is clear from the specification of either patent that an arthroscopic procedure and an endoscopic procedure both are simply surgical procedures for the removal of biological tissue. Support for this proposition, can be found in the '421 patent, Column 1, Line 28; Column 1, Lines 36-39; Column 2, Lines 16-18; Column 2, Lines 27-30; and Column 2, Lines 47-62. It is also clear that arthroscopy is considered to be an endoscopic procedure

(See Column 1, lines 25-26 of the '354 patent). While Applicant's application is directed to tissue removal generally and does not specifically discuss an arthroscopic or endoscopic procedure, both the present application and the '421 and '354 patents relate to the same patentable invention, i.e. the surgical removal of biological tissue with a laser.

In addition to the change in the preamble, the recited wavelength range of 1.8-2.2 microns in the '354 and '421 patents has been changed to 1.4-2.2 microns, the range recited in Applicant's claims. The recited wavelength range in the patents is within the range recited in the count, and constitutes the same patentable invention. The recitation "adjacent the tissue to ablated by the laser beam" has been changed to "at the surgical site." This latter recitation is broader than the patent claim, is supported by Applicant's specification, and recites the same patentable invention.

Each of Claims 44, 49, 50, 53, 56 and 57 and the proposed count differs from corresponding Claims 1, 4 and 7 of the '354 patent and Claim 1 of the '421 patent in the last paragraphs. The term "tissue" in the '354 and '421 patents has been changed to --surgical site-- for the reasons discussed above. The recitation "as it is being ablated by the laser beam" in Claim 1 of the '354 patent and in Claim 1 of the '421 patent does not appear in Claim 44-59 of the present application or in the proposed count. Similarly, the recitation "while the tissue is

maintained in a fluid field" in Claims 4 and 7 of the '354 patent is not found in Claims 44-59 of the present application, or in the proposed count. In Claims 53 and 56 and the count, these latter recitations in Claim 1 of the '421 patent and Claims 1, 4 and 7 of the '354 patent have been replaced by the following limitation: "removing tissue at the surgical site with the laser beam". The term "removing" was selected because it is supported by Applicant's specification and is broader than the corresponding term "ablating" found in the '421 and '354 patents. This recitation recites positively a limitation that is found in the last element of each patent claim. In Claim 1 of the '354 patent and in Claim 1 of the '421 patent, the "ablating" step is recited, but not positively. In Claims 4 and 7 of the '354 patent, the "ablating" step is positively recited.

The concept of irrigation of tissue with a liquid medium as it is being ablated by a laser beam, or the maintenance of the tissue in a fluid field while it is being ablated, is old in the art and is taught specifically in U.S. Patent No. 4,448,188 (Loeb) and in U.S. Patent No. 4,732,448 (Goldenberg). Both patents teach irrigation of a surgical site during the ablation process, and Loeb specifically teaches such irrigation when using a laser operating at infrared wavelengths. For example, see Loeb, Column 2, Lines 13-31; Column 4, Lines 4-64; Column 9, Lines 60-63; and Goldenberg, Column 3, Lines 29-38; and

Column 8, Lines 30-46. Since this element is old in the art, it is not a limitation which patentably distinguishes the claims of the '354 and '421 patents from the claims of the present application, even though it was argued to do so by Boutacoff et. al. during prosecution of the '421 patent. Thus, this limitation need not appear in the proposed count, or in Applicant's corresponding claims.

The following is an application of each term of Claims 44-59 to the above-identified application:

<u>Elements of Claims 44 & 49</u>	<u>Support in Application</u>
1. A method of performing a surgical procedure for the removal or repair of biological tissue	Page 6, lines 12-25.
2. generating a laser beam having a wavelength of between 1.4 and 2.2 microns	Page 6, lines 2-6.
3. directing the beam into one end of a fiber optic cable	Page 13, lines 12-15.
4. with the other end of the fiber optic cable defining the delivery end thereof	Page 13, lines 19-22; Page 15, lines 11-14.
5. (Claim 44) positioning the delivery end of the fiber optic cable at the surgical site (Claim 49) positioning the delivery end of the fiber optic cable adjacent the tissue to be removed or repaired by the laser beam	Page 1, lines 13-21; Page 14, lines 17-25; Page 21, lines 21-23; Page 31, lines 1 & 2; Column 9, lines 3-16 of U.S. Patent No. 4,850,351, specifica- of which is incorpor- ated by reference in the subject applica- tion at page 20, lines 3-8.

Elements of Claims 44 & 49

6. (Claim 44) irrigating the surgical site with a liquid medium

(Claim 49) irrigating the tissue with a liquid medium.

Claim 45-48, which correspond substantially to Claims 2, 3, 4, and 6 respectively of the '421 patent, do not define separate patentable inventions. Claims 45 and 46 find support in the present application at page 6, lines 6-8. Claim 47 is supported on page 6, lines 9-11 of the present application. Claim 48 is supported at page 15, line 15 through page 17, line 8 of the present application.

Elements of 50, 53 and 56

1. A method of performing a surgical procedure for the removal of biological tissue

2. Generating a laser beam having a wavelength of between 1.4 and 2.2 microns

3. Directing the beam into a proximal end of a fiber optic cable

4. With the other end of the fiber optic cable defining the distal end thereof (Claim 50 and 56)

5. Providing a fiber optic cable with a proximal end and a distal end (Claim 53)

6. With the fiberoptic cable being surrounded by an elongated tubular member (Claim 53)

Support in Application

Page 15, lines 1-10.

Support in Application

Page 6, Lines 11-24

Page 6, Lines 1-6

Page 13., Lines 12-15
Page 21, Lines 19-20

Page 13, Lines 19-22
Page 15, Lines 11-14
Page 21, Lines 21-22

Page 13, Lines 10-18
Page 17, Lines 8 through
Page 19, Line 6
Page 21, Lines 18-22

Page 13, Lines 15-18

Elements of 50, 53 and 56

7. Positioning the distal end of the fiber optic cable at the surgical site

8. Removing tissue at the surgical site with the laser beam

9. Transmitting a fluid medium to the surgical site (Claims 53 and 56)

Claims 51 and 52 correspond to Claims 5 and 6 of the '354 patent. Claims 54 and 55 correspond to Claims 8 and 9 of the '354 patent. Claims 51, 52, 53 and 55 do not define separate patentable inventions. Each of Claims 51, 52, 54 and 55 find support in the present application at Page 6, Lines 5-7.

Elements of Claims 57-59

1. A method of performing a surgical procedure for the removal of biological tissue;

2. Providing a fiber optic cable with a proximal end and a distal end

3. With the fiberoptic cable being surrounded by an elongated tubular member

4. Generating a laser beam having a wavelength of between 1.4 and 2.2 microns;

Support in Application

Page 1, Lines 13-21
 Page 14, Lines 17-25
 Page 21, Lines 21-23
 Page 31, Lines 1 and 2
 Column 9, Lines 3-16 of U.S. Patent No. 4,850,351, the specification of which is incorporated by reference in the subject application at Page 20, Lines 3-8

Page 6, Lines 11-14

Page 15, Lines 1-10

Support in Application

Page 6, Lines 11-24;

Page 13, Lines 10-18;
 Page 17, Lines 8 through
 Page 19, Line 6;
 Page 21, Lines 18-22;
 Page 13, Lines 15-18;

Page 6, Lines 1-6;

Elements of Claims 57-59

5. Directing the beam into a proximal end of a fiber optic cable;

6. Positioning the distal end of the fiber optic cable at the surgical site;

7. Removing tissue at the surgical site with the laser beam;

8. Wherein the laser beam is generated by a Ho:YAG laser;

9. Wherein the laser beam is generated by a Ho:YLF laser;

Support in Application

Page 13, Lines 12-15;
Page 21, Lines 19-20;

Page 1, Lines 13-21;
Page 14, Lines 17-25;
Page 21, Lines 21-23;
Page 31, Lines 1 and 2;
Column 9, Lines 3-16 of
U.S. Patent No. 4,850,351,
the specification of which
is incorporated by refer-
ence in the subject
application at Page 20,
Lines 3-8;

Page 6, Lines 11-14;

Page 10, Line 5;

Page 10, Line 4.

No prima facie is showing under 37 C.F.R. §1.608 is required, since Applicant's earliest effective filing date, July 31, 1985, precedes the earliest effective filing date, August 19, 1988, of the application resulting in either of the '421 patent or the '354 patent.

In summary, the proposed count and Applicant's Claims 44, 49, 50, 53, 56 and 57 each recite the same patentable invention as Claims 1, 4 and 7 of the '354 patent and Claim 1 of the '421 patent, as defined in 37 C.F.R. §1.601 (n). The count and each of Claims 44, 49, 50, 53, 56 and 57 are supported by Applicant's specification. The proposed count is broader than

any of Claims 1, 4 and 7 of the '354 patent, as well as Claim 1 of the '421 patent. The term "removing" is broader than "ablating". Also, the recited wavelength range in the count and the preamble thereof are broader than the corresponding elements of the patent claims. Thus, the count is acceptable pursuant to 37 C.F.R. §1.606 which only states that the count cannot be narrower than the corresponding patent claims. If the Examiner determines that the proposed count is unacceptable, Applicant would be willing to consider a phantom count suggested by the Examiner, although Applicant would prefer a count which tracks the patent claims, but is broader in scope.

It is respectfully requested that the enclosed Information Disclosure Statement be considered.

The specification and drawings have been amended to correct minor errors in the description of the drawing and in the reference numerals. Several reference numerals have been used more than once for different elements in the specification and drawings. In particular, reference numerals 58, 60, 62, 64, and 68 have been used to represent three different elements in Figures 6, 7, 8, 9, 10, and 11. To correct these obvious errors, applicant has amended pages 19-23 of the specification to change some of the reference numerals. The first time one of these reference numerals appears in Figs. 6 and 7, it was

left intact. However, in Fig. 8, reference numerals 60-68 were changed to reference numerals 160-168. In Figs. 9, 10, and 11, reference numeral 58 was changed to reference numeral 158, reference numeral 62 was changed to reference numeral 262, reference numeral 64 was changed to reference numeral 264, and reference numeral 60 was changed to reference numeral 260.

Proposed corresponding drawing corrections are also being submitted herewith. Attached hereto and marked in red are photocopies of Figures 8, 9, 10, and 11 indicating the requested changes to the reference numerals. Approval for these amendments to the drawings is respectfully requested.

In addition, on line 3 of page 23 of the application, the number of the patent which issued from the Sinofsky patent application referenced therein has been inserted. Also, on page 22, line 17, "its inner surface 62" was changed to--the inner surface of bore 262--for purposes of clarity.

It is submitted that the proposed changes to the specification and drawings merely correct obvious errors, and do not introduce any new matter.

It is submitted that all of the claims presently contained in this application are in condition for allowance. It is respectfully requested that an interference be declared between this application and U.S. Patent Nos. 5,037,421 and 5,147,354.

Respectfully submitted,

EDWARD L. SINOFSKY

Lawrence M. Green
Lawrence M. Green
Registration No. 29,384
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210
Attorney for Applicant
Tel. (617) 720-3500

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